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Two New Species of Conoidean Gastropods (Gastropoda: Conoidea) from the Northern South China Sea

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Abstract. Two new species from the northern part of the South China Sea of the families Conidae and Turridae (Neogastropoda: Conoidea) are described: *Tritonoturris concinnus* sp. nov. and *Ptychobela salebra* sp. nov. *Tritonoturris concinnus* differs from the closely allied species *T. macandrewi* (E. A. Smith, 1882), by having fewer and stronger axial ribs and a more convex body whorl; *Ptychobela salebra* differs from its closely allied species *P. flavidula* (Lamarck, 1822), by having more numerous and sharper spiral cords, much more convex whorls with a more angled slope, and a coarser shell surface.

INTRODUCTION

The Conoidea is a highly diverse group of gastropods, with over 4000 species having been described in the family Turridae alone (Powell, 1964, 1966; McLean, 1971; Wells, 1990; Kilburn, 1983). Unfortunately, the Turrid fauna from the China seas is still poorly known (MA, 1983, 2004). Recently, when we sorted the turrid collection of the Marine Biological Museum of the Chinese Academy of Sciences (MBMCAS, Qingdao) in the Institute of Oceanology, Chinese Academy of Sciences (IOCAS, Qingdao), two forms were encountered which could not be assigned to any described species, and are described as new species in the present paper.

The material were collected by investigations carried out since the 1950s, including the "National Comprehensive Oceanography Survey" (NCOS, 1958–1960) carried out by the Chinese government, "China-Vietnam marine resource investigation cooperative of Beibu Gulf (= the Gulf of Tonkin)" (1959–1962), "The resource investigation of coastal and shallow waters of Shandong Province," "The comprehensive resource investigation of the islands of China," "China-Germany marine biota cooperative investigations of Hainan Island, China" (1990–1992), by intertidal zone collection or trawling.

All the material is deposited in the MBMCAS, Qingdao.

Abbreviations in the text are as follows:

AT—Agassiz trawl
BT—beam trawl
CN—preliminary registration number of collection
IOCAS—Institute of Oceanology, Chinese Academy of Science
MBMCAS—Marine Biological Museum of the Chinese Academy of Sciences in the Institute of Oceanology, Chinese Academy of Sciences
RN—museum registration number
SCS—the South China Sea.
spm—specimen.

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SYSTEMATICS

The taxonomic system is based on the proposals of (Taylor et al., 1993).

Family Conidae Fleming, 1822

Subfamily Raphitominae Bellardi, 1875 (= Daphnellinae Casey, 1904)

Genus *Tritonoturris* Dall, 1924

Tritonoturris Dall, 1924, p. 88. Type species (o.d.) *Clathurella robillardi* "Barchy, 1869"= H. Adams, 1869

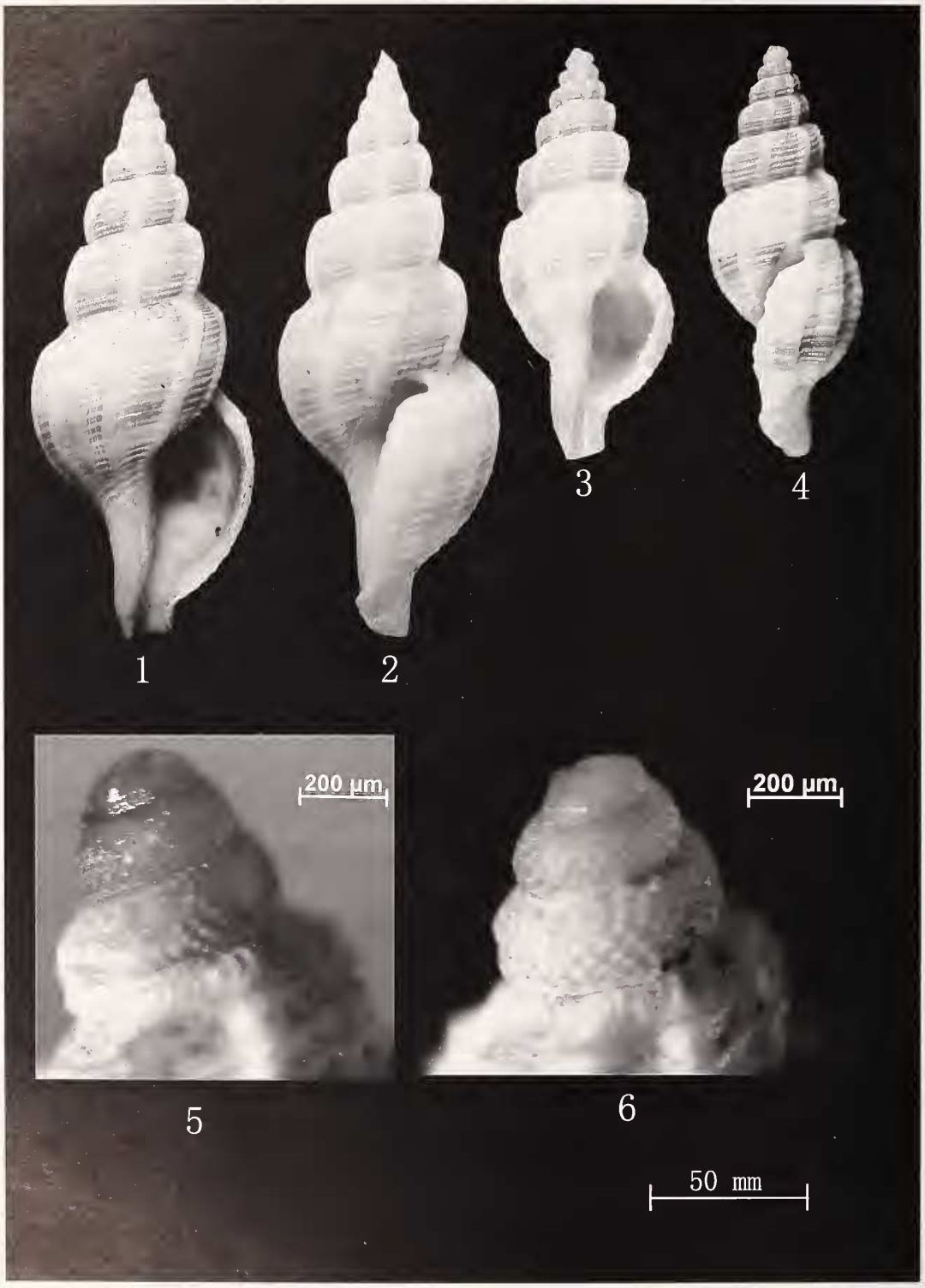
***Tritonoturris concinnus* sp. nov.**

(Figures 1–4, 5, 6)

Type material: Holotype, RN MBM081112, SCS, 21°00′N, 114°00′E, CN S79B-50, 78 m, Apr. 10, 1959, AT, collector Shaozong WU, MBMCAS.

Paratype: RN MBM081113, SCS, 22°00′N, 116°00′E, CN S227B-43, silty mud, 84 m, Apr. 22, 1960, AT, collector Jingzuo QU, MBMCAS.

Diagnosis: Shell of medium size, 12.2–16.9 mm in height, fusiform, brownish-grey in color. Protoconch



Figures 1–6. *Tritonoturris concinnus* sp. nov. 1–2, shell of holotype; 3–4, shell of paratype; 5–6 protoconch of paratype. Scale = 50 mm (Figs. 1–4); 200 µm (Figs. 5, 6).

Table 1
Measurements of *Tritonoturis concinnus* sp. nov.

	RN	Length (mm)	Width (mm)	Aperture (mm)	W/L	A/L
Holotype	MBM081112	16.9	6.9	8.1	0.41	0.48
Paratype	MBM081113	12.2	6.1	6.5	0.5	0.53

multispiral, of about 2.5 whorls. Spire tall, whorls about 7, convex; body whorl strongly convex. Suture deeply impressed. Shell sculptured with numerous strong spiral threads and regular axial ribs, aperture elongate-ovate, columella smooth. Anal sinus relatively shallow, U-shaped. Siphonal canal long, deep and wide.

Description of holotype: Shell of medium size, 16.9 mm in height, fusiform. Protoconch multispiral, of about 2.5 whorls; protoconch I of about 0.5 whorls with very weak spiral sculpture, protoconch II of about 2 whorls sculptured with diagonally cancellated ribs. Spire tall; whorls about 7, convex; body whorl strongly convex. Suture distinct, deeply impressed. Shell sculptured with numerous strong spiral ribs and strong axial ribs. Axial ribs regularly arranged on spire whorls, of about 7 ribs per whorl, and forming a continuous line on successive whorls; 14 ribs on body whorl, not very regular. Primary spiral ribs 6 on penultimate whorl, and about 21 on body whorl; there are also fine secondary spiral threads between primary spiral ribs. Aperture elongate-ovate, widely open; columella smooth. Anal sinus relatively shallow, U-shaped, just below suture. Siphonal canal long, deep and wide, anterior tip of shell notched. Shell brownish-grey in color.

Measurements: See Table 1.

Distribution: Known only from the South China Sea, at the depths of 78–84 m.

Etymology: "concinnus," Latin: well-arranged, referring to the shell well sculptured with regular axial ribs.

Remarks: Powell (1966) also reported seven characteristic species of genus *Tritonoturris*, and this new species can be separated from the other species on shell outline features and sculpture. The new species is similar to *Tritonoturris macandrewi* (E. A. Smith, 1882), but can be easily distinguished from the latter by having fewer and stronger axial ribs, and a more convex body whorl.

Family Turridae H. & A. Adams, 1853

Subfamily Crassispirinae Morrison, 1966

Genus *Ptychobela* Thiele, 1925

Ptychobela Thiele, 1925, p. 181. Type (o. d.) *Pleurotoma crenularis* Lamarck, 1816.

***Ptychobela salebra* sp. nov.** (Figures 7–9)

Drillia perculathrata Eisenberg J. M., 1981: 150, pl. 132, fig. 13. (evidently a misspelling for *perclathrata*, *nomen nudum*).

Inquisitor perculathrata Chang & Wu, W., 2000, p. 13–26, figs. 6a–b;

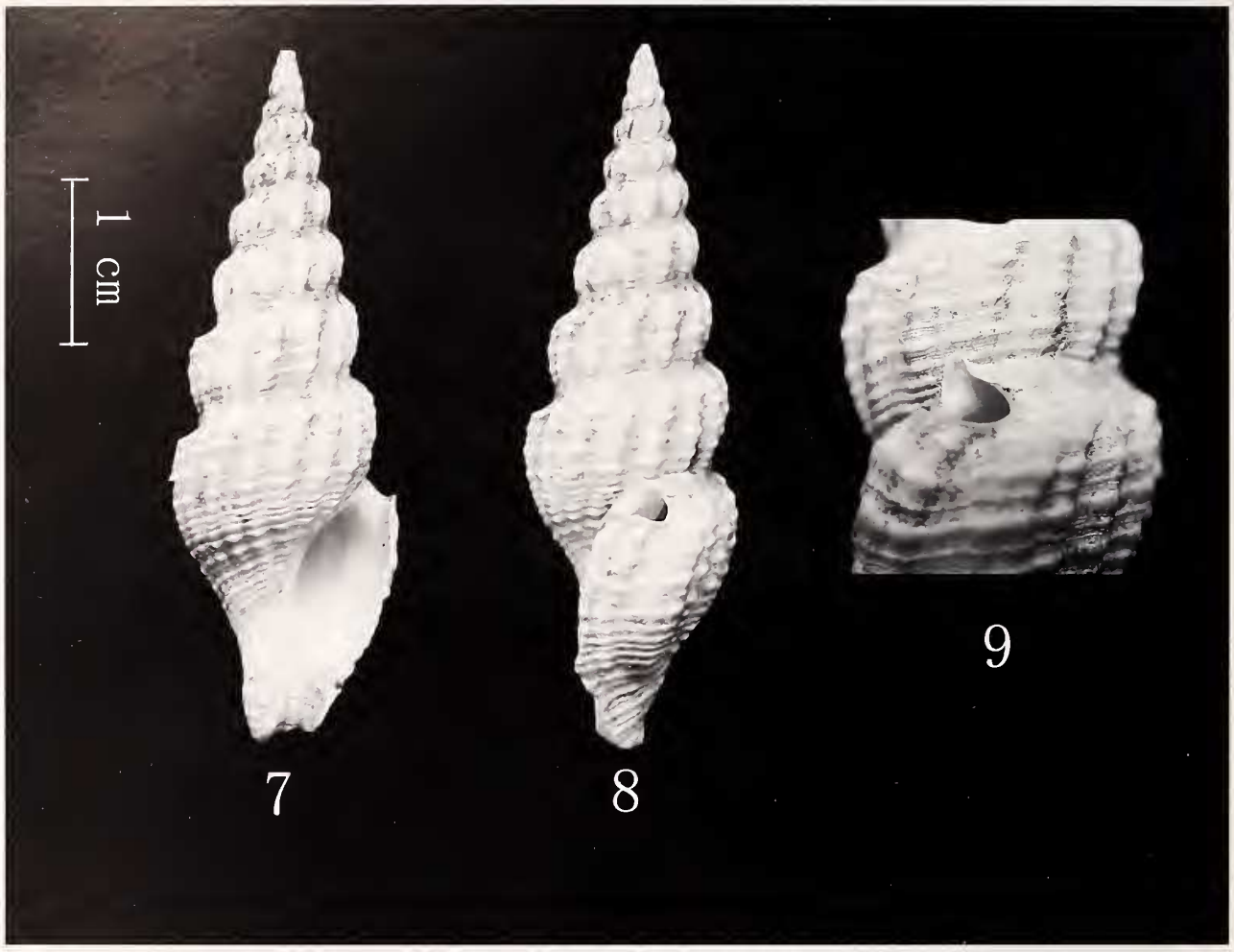
Inquisitor perclathrata Tucker, J, K., 2004: 746 (*nomen nudum*).

Type material: Holotype, RN MBM081114, SCS, 18°15′N, 111°00′E, 170 m, silty mud, Jan. 26, 1959, collector Yongliang WANG, MBMCAS.

Paratypes: 1 spm, RN MBM081115, SCS, 21°45′N, 116°30′E, CN S156B-13, 93.7 m, silty mud, Nov. 20, 1959, AT, collector Weiquan ZHANG & Shaozong WU, MBMCAS; RN MBM081116, 1 spm, SCS, 22°00′N, 115°30′E, CN S155-B-31, 78 m, silty mud, Dec. 20, 1959, AT, collector Weiquan ZHANG & Shaozong WU, MBMCAS; RN MBM081117, 1 spm, SCS, 20°30′N, 112°30′E, CN K125B-69, 78 m, muddy sand, Feb. 9, 1960, AT, MBMCAS; RN MBM081118, 1 spm, SCS, 20°00′N, 113°00′E, CN SIII20B-60, 105.3 m, sandy mud, Jul. 14, 1959, AT, collector Weiquan ZHANG, MBMCAS; RN MBM081119, 1 spm, CN Q115B-11, SCS, 22°00′N, 116°00′E, 88 m, fine sandy mud, Jan. 9, 1960, AT, MBMCAS; RN MBM081120, 1 spm, SCS, 22°00′N, 116°00′E, CN S161B-23, 85 m, fine sand, Oct. 23 1959, AT, collector Weiquan ZHANG & Shaozong WU, MBMCAS.

Diagnosis: Shell of medium size for genus, 23.0 to 42.3 mm in height, claviform, solid, with a high spire. Whorls obviously convex, about 10, angled at shoulder. Suture channeled, subsutural slope very narrow, concave. Shell sculptured with sharp oblique axial folds and spiral cords, the spiral cords almost equally developed on axial folds and in interstices. Aperture elongate-oval, relatively narrow; outer lip margin thin. Anal sinus relatively deep, U-shaped. Canal moderately short and straight.

Description of holotype: Shell of medium size, 42.3 mm in height, claviform. Spire high, whorls about 10, strongly convex. Suture shallow and wavy. Axial folds strong and sharp, slightly oblique, crossed by strong spiral cords, forming a course surface. Subsutural slope narrow and concave. There are about 18 axial folds on body whorl, 15 on penultimate; the next to last axial fold becoming a varix behind outer lip margin. There



Figures 7–9. *Ptychobela salebra* sp. nov., shell of holotype. Scale = 1 cm (Figs. 7–9).

are about 23 spiral cords on body whorl, 6 on the penultimate, and finer secondary spiral lines between primary spiral cords. Aperture elongate-oval, outer lip thin, with indented margin. Anal sinus on subsutural slope, deep, U-shaped. Canal relatively long, notched and recurved. Shell uniformly brownish-yellow.

Measurements: See Table 2.

Distribution: Japan and the South China Sea, 50 to 170 m.

Etymology: "salebra," Latin; roughness, referring to the coarse sculpture of the shell.

Remarks: *Ptychobela salebra* sp. nov. is close to *Ptychobela flavidula* (Lamarck, 1822). It differs from

Table 2
Measurements of *Ptychobela salebra* sp. nov.

	RN	Length (mm)	Width (mm)	Aperture (mm)	W/L	A/L
Holotype	MBM081114	42.3	14.3	18.2	0.34	0.43
Paratype	MBM081115	26.8	9.9	12.7	0.37	0.47
	MBM081116	23.0	8.6	10.2	0.37	0.44
	MBM081117	28.5	9.5	12.5	0.33	0.43
	MBM081118	41.3	13.6	19.3	0.33	0.47
	MBM081119	38.5	12.1	17.5	0.31	0.45
	MBM081120	33.3	11.5	16.2	0.34	0.45

the latter by having more numerous and sharper spiral cords, and much more convex whorls with a more angled slope, and a coarser surface than the latter. Although *Ptychobela* is characterized by a very high variability, after a careful examinination of a large series of specimens, we can easily separate this species from the typical form of *Ptychobela flavidula* (the holotype figured by Wells, 1994: 94. pl. 5, figs. 7–8).

Eisenberg (1981) reported this species as *Drillia perculatlirata* from Japan and Chang & Wu (2000) reported it as *Inquisitor perculatlirata* from Taiwan, China (which is evidently a misspelling for *perclatlirata*). Tucker (2004) briefly reviewed the species, he thought that *I. perclatlirata* was credited to Kuroda, MS in Azuma and to Kuroda in Eisenberg, but is a *nomen nudum* in both Azuma and Eisenberg, and inavailable in Chang & Wu. There is no statement of intention to propose a new name. So, we reported this species as new to science, and tentatively placed it in the Genus *Ptychobela*.

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